



PATENT  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
Mats BLÜCHER et al. ) Confirmation No.: 1714  
Application No.: 10/609,489 ) Group Art Unit: 3722  
Filed: July 1, 2003 ) Examiner: Willmon Fridie Jr.  
For: APPARATUS FOR CHIP )  
REMOVING MACHINING )

Commissioner for Patents  
U.S. Patent and Trademark Office  
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Sir:

**PRE-APPEAL BRIEF REQUEST FOR REVIEW  
TO ACCOMPANY A NOTICE OF APPEAL**

In response to the Final Office Action dated November 15, 2007, the period for response to which extends through February 15, 2008, a Pre-Appeal Brief Review is requested in the above-identified application.

### Status of the Claims

In the Office Action dated November 15, 2007, claims 1-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,599,050 to Sjöö (“Sjöö”) in view of U.S. Patent No. 6,146,060 to Rydberg et al. (“Rydberg”).

Claims 1-9 are pending as recited in the Amendment filed on August 3, 2006.

### Summary of Embodiments of the Invention

With reference to Figs. 1-3 of the instant application, in an embodiment Applicants’ invention is directed to an apparatus for chip removing machining, including a first part 1 and a second part 15 coupled together by a coupling. The coupling includes two interacting surfaces 3, 17 and a clamping member 21 for forcing the surfaces together. The interacting surfaces are profiled with male members 19, 20 and female members 7A, 7B, respectively that are intercoupled to establish a firm locking of the first and second parts against each other. The first and the second parts are provided with aligned holes 5, 14 for receiving the clamping member. The male and the female members are oriented on the interacting surfaces such that the male and female members intercouple only in a single position. The orientation of the male and female members prevents the male and female members from intercoupling in another position.

As described at paragraph 0005 of Applicants’ specification, an object of the invention is to provide a coupling between two tool parts, such that the coupling may transfer a large torque at the same time as the tool parts only may assume one single position in relation to each other.

As described at paragraph 0033 of Applicants’ specification, the forming of a male member (e.g. elongate ridge 20) with a maximum extension thereof in a direction S3, ensures that the second part (e.g. cutting head 15) may only be mounted in one way on the first part (e.g. holder 1), which is realized by studying the groove configuration of the front surface 3 of the holder 1.

As described at paragraph 0035 of Applicants’ specification, by observing the groove configurations of the front surface 3 and the support surface 17, it is realized that the only place where the elongate ridge 20 may be received is in the first groove 7A. Therefore, the risk of the cutting head 15 being mounted in an incorrect position is eliminated.

As described at paragraph 0036 of Applicants' specification, since the cutting head 15 may only be mounted in a single position on the holder 1, it is possible to arrange a cooling channel 11 in such a way that cooling medium coming out from the same is directed towards an edge portion 16 of the cutting head 15.

### Arguments

Claims 1-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sjöö in view of Rydberg. Applicants respectfully traverse the rejection. In contrast to Applicants' invention, Sjöö is directed to a tool coupling including a holder and a cutting insert adapter that may be connected with each other in multiple positions. As described at col. 4, ll. 11-28, and illustrated in Figs. 1-3 of Sjöö, the axial end surfaces of holder 1 and adapter 3 include serrations 12 and 16 respectively. The groove configuration of the respective serrations 12, 16 have a mutually adapted design, and are oriented parallel to each other. Displacement of a stud screw 5 in the center hole 17 brings the holder 1 and the adapter 3 together until the serrations 12, 16 are in complete engagement with each other. As described at col. 6, ll. 19-24 of Sjöö, the tool coupling is symmetrical in relation to its longitudinal center axis 13, which means that the holder may be used both for tools of right-hand type and left-hand type. In certain special applications, for instance in connection with certain special types of turning, the adapter 3 may be rotated 180° relative to the holder 1. As stated at col. 6, ll. 25-26, “[T]his may be effected by the tool coupling according to the present invention [of Sjöö].” Thus, Sjöö clearly discloses a tool coupling including a holder and a cutting insert adapter that may be connected with each other in multiple positions. In this regard, at page 3, lines 3-6, the Office Action acknowledges that “Sjöö lacks the disclosure of the male and the female members being oriented on the interacting surfaces such that the male and female members intercouple only in a single position and the orientation of the male and female members prevents the male and female members from intercoupling in another position.” At page 3, line 7, the Office Action goes on to assert that Rydberg “discloses such an arrangement.”

Turning first to the Abstract of Rydberg, the Rydberg tool includes a cutting head and a holder, the cutting head and the holder form two cooperating surfaces that are pressed together. The cooperating surfaces allow at least four separate relative positions between the cutting head and holder. The Detailed Description of Rydberg goes on to describe that Figs. 2A to 2D show a

tool 10 including a holder 11, a cutting head 12 and a screw 13. One end of the holder 11 includes a front surface 14 and a threaded hole 15. The front surface 14 has a circular basic shape and includes first and second rows of grooves 16B, 16A. See col. 4, ll. 27-36 of Rydberg. As described at col. 5, ll. 9-10, and illustrated in Fig. 2A, pyramid shaped projections P are formed when the second groove row 16A intersects the first groove row 16B. As described at col. 5, ll. 20-38, and illustrated in Fig. 2B, cutting head 12 includes a support surface 22 having a waffle pattern thereon. As described at col. 6, ll. 5-7, “the milling tool 10 is mounted by manually placing the support surface 22 of the cutting head 12 against the front surface 14 of the holder 11 in one of four possible positions.” (emphasis added). Regarding alternate embodiments of the Rydberg device, see also col. 7, line 67 – col. 8, line 1, and col. 8, lines 32-34. Also see Applicants’ specification at paragraph 0003 which includes a brief description of Rydberg.

At page 4, line 6-10, the Office Action asserts that Rydberg “recites the desirability of mounting the tool in only one position,” and appears to rely on the disclosure at col. 6, lines 39-42 of Rydberg to support the assertion, which recites “[i]n case the tool shall be used for milling then only one position relative to the cooperating surfaces is needed, since the cutting head 12 would be rotating.” However, Applicants note that the very next sentence of Rydberg goes on to recite “[i]f the tool shall be used for turning (i.e., the cutting head being stationary), then four different positions for the head are required to be able to index all cutting edges sequentially into active position.” In other words, Applicants submit that Rydberg discloses a cutting head that can be mounted against the front surface of a holder in one of four possible positions, only one of which is necessary for milling operations, and all of which are necessary for turning operations including indexing.

Applicants respectfully submit that Rydberg also does not show at least the features of “the male and the female members are oriented on the interacting surfaces such that the male and female members intercouple only in a single position, the orientation of the male and female members prevents the male and female members from intercoupling in another position,” as recited in claim 1. Thus, a combination of Sjöö and Rydberg fails to disclose this feature.

Moreover, not only does each of Sjöö and Rydberg fail to disclose this feature, each of Sjöö and Rydberg teach away from the male and female members intercoupling only in a single position.

Claims 2-7 depend from claim 1 and recite the same combination of allowable features recited in independent claim 1, as well as additional features that define over the applied references. In consideration of the above, Applicants respectfully submit that claims 8 and 9 are also allowable at least for the following reasons:

Claim 8 recites "the axially irregular surface profile adapted to be received in a corresponding axially irregular surface profile of the holder surface at a first angular position about the center axis with respect to the holder surface; wherein the surface profile of the head surface precludes reception thereof in the surface profile of the holder surface at all other angular positions about the axis such that the head surface and the holder surface intercouple only in a single position and no other position."

Claim 9 recites "the axially irregular surface profile adapted to be received in a corresponding axially irregular surface profile of the head surface at a first angular position about the center axis with respect to the head surface; wherein the surface profile of the holder surface precludes reception thereof in the surface profile of the head surface at all other angular positions about the axis such that the holder surface and the head surface intercouple only in a single position and no other position."

### **Conclusion**

In view of the foregoing, Applicants submit that the outstanding rejection should be withdrawn, and claims 1-9 should be allowed.

Respectfully submitted,

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